IN THE CLAIMS:

1-27. **(Previously Canceled)**

Cancel claims 29, 42 and 43.

28. **(Currently Amended)** A method of regulating or controlling a cyclically operating internal combustion engine using a computation model by which a cycle or portions of the cycle of the internal combustion engine is, or are, divided into individual cycle parts and ~~the~~ an operating ~~condition~~ status within each cycle part is determined ~~using~~ from at least one of measured values, stored ~~and/or~~ and applied data in order to obtain actuating variables for operating said internal combustion engine, wherein the computation models for ~~the~~ various individual cycle parts are based on at least partially different assumptions ~~and/or~~ or have different simplifications and ~~that~~ the time limits of the cycle parts are at least partially calculated as a function of at least one variable engine operating parameter, wherein computation models for the individual cycle parts evolve from an initial condition and algebraically calculate in one step computation variable during duration of the cycle part, wherein an operating status at an end of a cycle part is used as an initial condition for computing a next cycle part and wherein each operating status is defined by at least one variable selected from a group comprising torque, mass-flow, in-cylinder charge condition of the cylinders, energy content of exhausts and wall heat flow of at least one cylinder.

29. **(Canceled)**

30. **(Currently Amended)** The method according to claim 28, wherein at least one limit of at least one cycle part is defined by at least one of a position of intake ~~and/or~~ valves and a position of exhaust valves.

31. **(Currently Amended)** The method according to claim 28, wherein at least one cycle part is defined by ~~the~~ a completely open condition of the intake and exhaust valves.

32. **(Previously Presented)** The method according to claim 28, wherein at least one limit of at least one cycle part is defined by a beginning of a combustion process.

33. **(Previously Presented)** The method according to claim 28, wherein at least one limit of at least one cycle part is defined by an ignition process of a fuel.

34. **(Previously Presented)** The method according to claim 28, wherein at least one limit of at least one cycle part is defined by an end of the combustion process.

35. **(Previously Presented)** The method according to claim 28, wherein at least one cycle part is defined by at least one combustion process.

36. **(Previously Presented)** The method according to claim 28, wherein at least one cycle part is defined by a direction of motion of a piston.

37. **(Currently Amended)** The method according to claim 28, wherein a limit of at least one cycle part is defined by a top dead center of ~~the~~ a piston.

38. **(Currently Amended)** The method according to claim 28, wherein a limit of at least one cycle part is defined by a bottom dead center of ~~the~~ a piston.

39. **(Previously Presented)** The method according to claim 28, wherein at least one cycle part is defined by the compression process of a gas enclosed in a cylinder.

40. **(Currently Amended)** The method according to claim 28, wherein at least one cycle part is defined by an expansion process of ~~the~~ gas enclosed in ~~the~~ a cylinder.

41. **(Previously Presented)** The method according to claim 28, wherein the computation of the computation variables of each cycle part is performed in real time.

42. **(Canceled)**

43. **(Canceled)**

44. **(Previously Presented)** The method according to claim 28, wherein at least one operating variable selected from a group comprising intake pressure, intake temperature and gas composition in a suction pipe is detected as an engine operating parameter.

45. **(Previously Presented)** The method according to claim 28, wherein at least one operating variable selected from a group comprising exhaust pressure, exhaust temperature and exhaust composition in a exhaust elbow is detected as an engine operating parameter.

46. **(Currently Amended)** The method according to claim 28, wherein at least one parameter of a valve train mechanism~~, namely the~~

selected from the group consisting of timing of ~~the~~ intake ~~and/or~~ valves, timing of exhaust valves, ~~and/or a~~ effective cross-sectional area of flow of the intake ~~and/or~~ valves and effective cross-sectional areas of flow of the exhaust valves is detected as an engine operating parameter.

47. **(Currently Amended)** The method according to claim 46, wherein the effective cross sectional areas of flow of the intake ~~and/or~~ and the exhaust valves are approximated by a rectangular or stepped curve.

48. **(Currently Amended)** The method according to claim 28, wherein at least one parameter of combustion~~, namely an~~ selected from the group consisting of injection timing ~~and/or~~ , ignition time ~~and/or~~ and an amount of fuel injected is detected as an engine operating parameter.

49. **(Currently Amended)** The method according to claim 28, wherein at least one of an engine speed ~~and/or~~ and a cylinder wall temperature is determined as an engine operating parameter.

50. **(Previously Presented)** The method according to claim 28, wherein at least one engine operating parameter is analytically determined.

51. **(Previously Presented)** The method according to claim 28, wherein at least one engine operating parameter is determined by measurement.

52. **(Currently Amended)** The method according to claim 28, wherein at least one engine operating parameter is determined

analytically and by measurement and ~~that~~ computed and measured values are aligned.

53. **(Currently Amended)** The method according to claim 52, wherein at least one engine operating parameter selected from the group ~~comprising~~ consisting of mass flow, cylinder pressure, air-fuel ratio and torque are determined analytically and by measurement.

54. **(Currently Amended)** The method according to claim 46, wherein the effective cross sectional areas of flow of the intake ~~and/or~~ and exhaust valves are approximated by a mean cross-sectional area of flow.

55. **(Currently Amended)** The method according to claim 28, wherein, for deducing equations for computation variables, ~~the~~ effective piston speed is approximated by a mean piston speed in at least one cycle part.

56. **(Previously Presented)** The method according to claim 55, wherein an error resulting from an assumption of a mean piston speed is compensated resolving the equations of the computation variables.